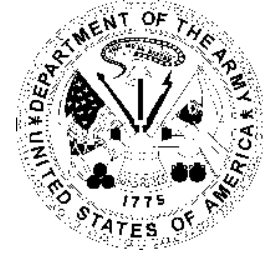




**US Army Corps  
of Engineers®**



**DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS**

**COMPLETE STATEMENT**

**OF**

**CHARLES M. HESS  
CHIEF, OPERATIONS DIVISION  
DIRECTORATE OF CIVIL WORKS  
BEFORE THE**

**WATER RESOURCES AND ENVIRONMENT SUBCOMMITTEE  
AND  
COAST GUARD AND MARITIME TRANSPORTATION SUBCOMMITTEE  
OF THE  
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE  
UNITED STATES HOUSE OF REPRESENTATIVES**

**PORT AND MARITIME TRANSPORTATION CONGESTION**

**MAY 23, 2001**

## **INTRODUCTION**

Mr. Chairmen and Members of the Subcommittees, I am Charlie Hess, Chief of the Operations Division, Directorate of Civil Works for the U.S. Army Corps of Engineers. Thank you for the opportunity to testify on the issue of port and maritime congestion. My statement will consist of an overview of the macroeconomic conditions which are contributing to port congestion, the needs of ports and waterways to alleviate this congestion and finally the actions the Corps is taking to assist ports toward minimizing congestion.

The Corps has long been involved in meeting the needs of the marine transportation system. The Corps navigation mission is committed to providing safe, reliable, efficient, and environmentally sustainable waterborne transportation systems for movement of commerce, support to the national economy and meeting national security needs.

## **MACROECONOMIC CONDITIONS**

Changes in the global economy and technological advances in the world merchant fleet are critical forces that apply pressure to port infrastructure and create conditions of congestion. Much of the boom in world trade can be attributed to changes in the global marketplace. Improved access to international markets has had a major impact since much of the world has opened its doors to trade. Opportunities for U.S. ports are largely dependent upon the ability to recognize and react to changes in the shipping industry and world commodity markets. The ability to react and meet the changing demands of international shippers will ultimately determine the amount of congestion our port and maritime system will experience.

International commerce with the United States has become increasingly important for most nations throughout the world. The U.S. has become the world's largest trading nation and is the number one market place in the world. In 1999, U.S. waterborne trade accounted for almost 20 percent of the global maritime trade. Global trade is one of the more dynamic components of the world economy. Global economic development, liberalization of trade policies and a general trend toward global integration of manufacturing industries have all fueled international trade. In 1959, foreign commerce accounted for about eight percent of the U.S. Gross Domestic Product (GDP) and by 1999 foreign trade reached about 27 percent of GDP. Since 95 percent of foreign trade is transported by water, ports and harbors, and inland waterways have become increasingly important for national economic growth.

Changing patterns of international business investment have supported the boom in world trade. Large-scale foreign investments have helped propel growth in maritime shipping. Production of manufactured goods is less integrated than in the past and more steps of the production process are occurring in many different countries. For example, a product marketed in Europe may have been assembled in the United States with component parts made in Asia. The implication for ports and the maritime industry is clear. Manufactured goods and their components must be transported internationally with the fastest and most cost effective means being the

containership. This is why U.S. container trade has historically been doubling every ten years.

Industries worldwide have been moving away from maintaining huge inventories stored in warehouses and distribution centers to just-in-time logistics. The logistics supply chain has become dependent on efficient reliable transportation across all modes of transportation. When the slightest delay occurs from either insufficient water depth or congestion at the receiving terminal, the supply system can suffer disruptions in throughput. Disruptions can cause limited shortages, which ultimately can affect the price of goods.

The growth in U.S. international trade has resulted in significant growth in U.S. export tonnage. Large portions of export commodities tend to be low value bulk shipments that rely heavily on the inland waterway system. The linkage between deep water ports and the inland waterway system enables U.S. exports to be competitive in world markets. Thus the growing demand in global markets has had a measurable affect on inland waterway usage.

The world merchant fleet changes through time as new ships are built and older, obsolete vessels are scrapped. Ships are constructed to meet expected demand in the market place and the capacity of the world fleet continues to shift towards servicing the faster growing markets. Changes in capacity of the containership fleet have occurred at an annual rate of about nine percent per year for the last 15 years. A large part of this substantial growth has been in the largest sizes of containerships as carriers deploy these vessels on round-the-world trade routes to take advantage of huge economies of scale. Economic efficiency is the principle force in the trend toward larger containerships. Larger vessels can carry more goods and thus have lower unit transportation costs. Some studies have indicated as much as a twenty percent cost advantage for using large mega-containerships over smaller vessels. The benefits of these efficiencies are accruing not only to the transportation industry, but to the shippers and receivers of goods and the ultimate consumers. The use of these mega-containerships has created an increased demand for worldwide port development that involves additional container terminals and increased channel capacities.

### OLD VS. NEW

1978  
2600 teu

1998  
4600 teu

**PORT**

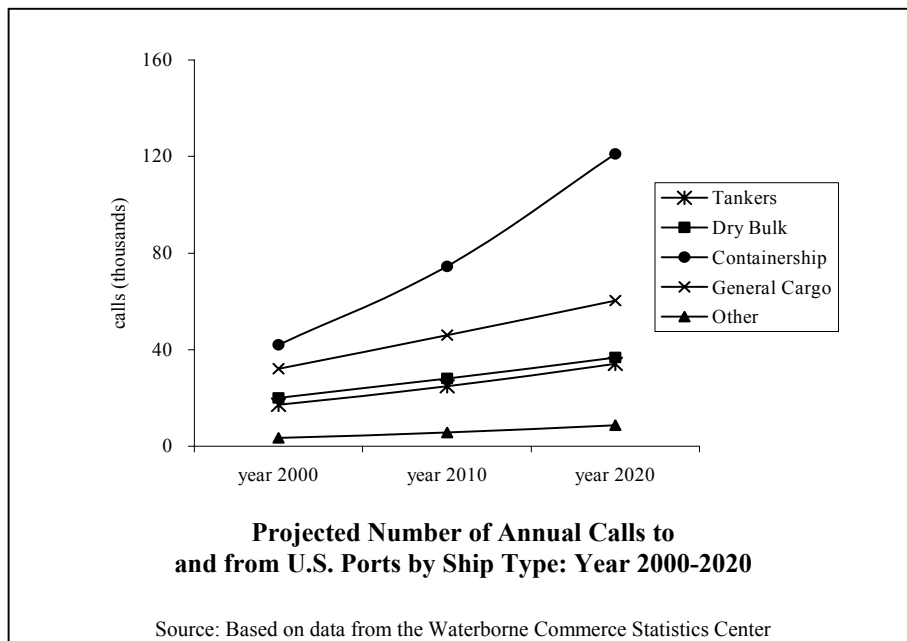


**NEEDS**

Vessel demands on the U.S. port system are expected to intensify during the next two decades as the world economy expands and all nations become increasingly dependent upon global commerce. Increasing global trade means increased demand for shipping. The greatest growth areas are expected to occur in commodities typically transported in containerships. U.S. international trade, measured in terms of value, is heavily concentrated in a small number of ports with about 90 percent of cargo handled by 25 U.S. ports. This is directly related to the growth in container shipping since high value cargo is generally shipped in containers.

Containerships carry almost 55 percent of international cargo in terms of value. They transport large amounts of manufactured commodities such as consumer goods, electrical equipment and automobile parts. Over the next twenty years the amount of cargo carried in containers is expected to increase to between 60 and 65 percent.

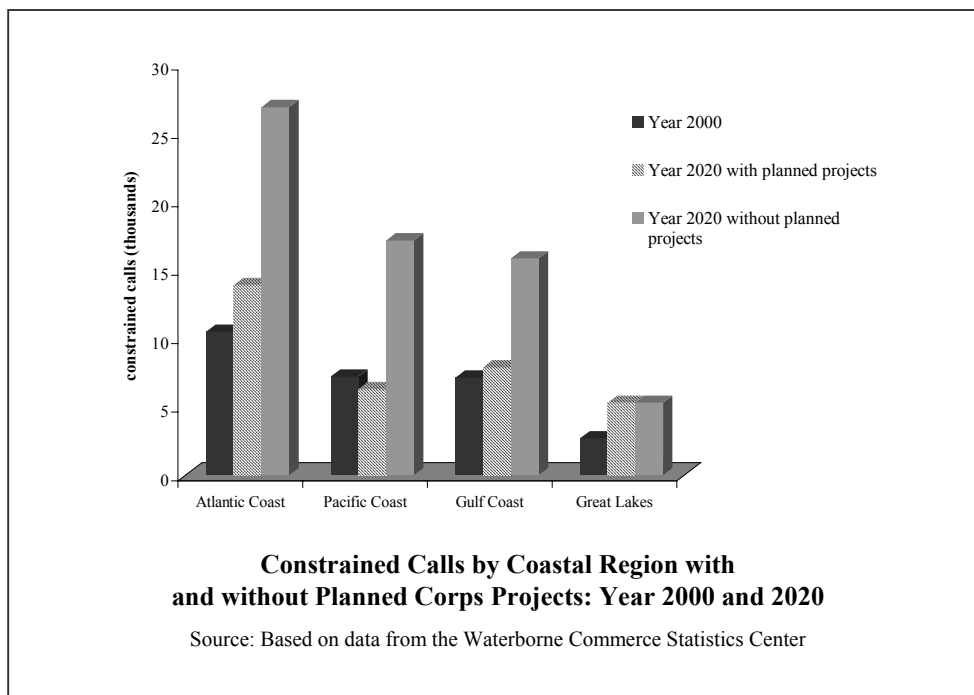
As commodity flows increase, vessel calls on the Nation's ports system will grow. Calls by containerships are estimated to be the fastest growing sector of the maritime shipping industry. The sizes of these containerships, in draft, length and beam, have grown dramatically in a very short period of time. Many of the world's leading container ports are trying to keep pace with the growth of these vessels by deepening and widening their navigation channels to depths ranging from 48 to in excess of 55 feet. Many of our ports have reacted to these increased pressures from the growing container traffic by investing heavily in landside infrastructure. However, navigation channel dimensions remain an obstacle for many of our ports, particularly along the Gulf and Atlantic coasts where the major container ports have channel depths of 45 feet or less.



The above chart provides information on existing and anticipated growth in vessel calls by ship type. The estimated vessel calls by all vessels in 2000 was approximately 115 thousand with about 42 thousand being containership calls. The total number of vessel calls is anticipated to

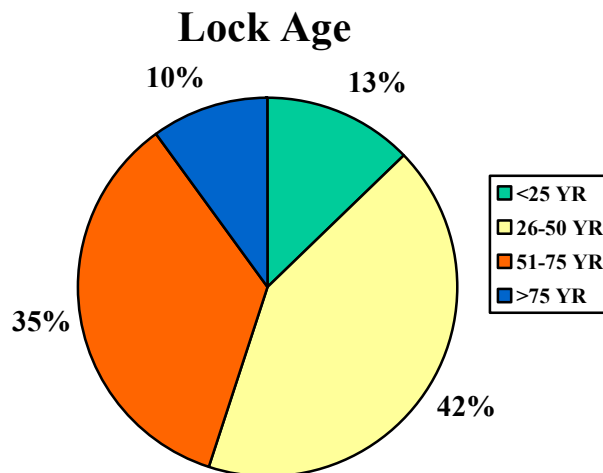
grow to about 261 thousand calls by 2020 with approximately 121 thousand of those calls representing containership calls. This means that containership calls currently represent about 36 percent of all vessel calls to U.S. ports and will likely grow to approximately 46 percent of total U.S. port calls.

As containerships grow in size the larger vessels may be constrained by channel depths. Whenever the maximum loaded design drafts of these vessels exceed the available channel depths in a port there is a potential for the vessel call to be constrained. In the year 2000, approximately 27,500 vessels that had a maximum design draft greater than the channel depth of the port in which they were calling. In the future, this number is expected to grow. The following chart shows estimated constrained calls by coast with and without building the backlog of Corps projects. Assuming planned projects are built, constrained calls will rise to approximately 34,400 in the year 2020 (an average annual growth rate of about one percent). However, in the absence of planned projects, constrained calls would more than double to about 65,200 per annum (an average annual growth rate of about 4.4 percent). Investment decisions must await the completion of cost-benefit analysis of specific projects to determine whether the benefits of deepening outweigh the cost.



The inland waterways, our inland waterborne transportation link to the deep water ports, suffer from aging infrastructure that causes performance and customer satisfaction problems. As shown in the following chart, 45 percent of the locks we are operating today exceed their 50-year design life with 10 percent of those locks being older than 75 years. In the next ten years, without major

rehabilitation or lock modernization, 73 percent of all existing locks will exceed their 50-year design life. Given the aging infrastructure and increasing commodity flows the cost of transit delays was estimated to be \$276 million in 1999.



### **CORPS RESPONSE**

The Army Corps of Engineers has an ongoing Civil Works program to assist the Nation in developing navigation improvements to meet current and future demands for domestic and international trade. Districts are actively engaged with their stakeholders to identify potential solutions to perceived navigation problems, including improved management of the existing system. Regarding consideration of new capacity, the Corps has streamlined the planning and design process whereby completion of all activities leading to construction can be completed within seven years. To achieve this schedule funding must be available. Constrained Federal funding has precluded achievement of the seven year schedule in many cases. This means the Corps will have to set priorities to avoid delaying all projects.

There is a backlog of about \$8.4 billion for 116 projects designed to improve the marine transportation system, both coastal and inland. The backlog continues to grow in a direct relationship to new project authorizations and inflation on the uncompleted portion of projects that are already authorized. The backlog has grown because limitations on the availability of Federal funds have not allowed needed projects to be completed in the optimum manner. By continuing to “stretch” the implementation schedules for projects the Nation is foregoing benefits that could have been achieved. For example, if all seven of the Inland Waterway projects proposed in the FY01 budget had been funded all along at the Current Engineering Optimum schedule, \$758 million in lost benefits from transportation savings could have been realized. Of course, from a broader standpoint, funds not directed to inland waterway projects

may have been invested in activities with higher returns.

Our goal is to balance economic objectives with environmental values. Our goal is navigation management and infrastructure improvements that achieve both economic and environmental benefits. To this end the Army is considering various forms of Independent Review for major projects. The Chief of Engineers has reactivated the Environmental Advisory Board to provide guidance and advice on future needs. The Corps is proactively participating in the Marine Transportation System Vision 2020. We are establishing a Regional Sediment Management Policy to meet the challenges of optimizing our coastal and watershed systems, reducing costs and increasing benefits. We are investing in innovative construction techniques that are more environmentally friendly and cost less. In order to ensure our ability to proactively respond to the rapid changes and challenges of the Marine Transportation System, we must invest in the development of modeling and management tools for our project managers. Proactive management of our navigation projects requires a new and broader understanding of the forces that constantly alter the channels and waterways, and challenge our ability to better predict, and better manage these complex hydrodynamic systems, and improve our ability to control where sedimentation occurs, not only to improve our ability to dredge, but also to allow us to control where the dredged material will be placed. Regional sediment management practices will improve our ability to minimize the inflow of sediment in our watersheds and improve our opportunities to use dredged material as a resource, whether it is for brownfields covering, habitat restoration, or beach renourishment and energy dissipation.

## **CONCLUSION**

In summary, Mr. Chairman and other members of the Subcommittee, the Army Corps of Engineers' navigation mission is committed to provide safe, reliable, efficient, and environmentally sustainable waterborne transportation systems (channels, harbors and waterways) for movement of commerce, national security needs, and recreation.

We are seeking opportunities to more efficiently and effectively improve our navigation projects to respond to the increasing vessel traffic demands and increasing vessel sizes. This concludes my statement. Thank you for this opportunity to discuss the Army Corps of Engineers experience and capabilities.